UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
2002/01503

March 17, 2003

Mr. Fred Patron
Federal Highway Administration
The Equitable Center, Suite 100
530 Center Street NE
Salem, OR 97301

Re: Endangered Species Act Section 7 Formal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation on the Effects of the Bear Creek Greenway Trail Project, Jackson County, Oregon

Dear Mr. Patron:

Enclosed is a biological opinion (Opinion) pursuant to section 7 of the Endangered Species Act (ESA) prepared by the National Marine Fisheries Service (NOAA Fisheries), on the effects of the proposed Bear Creek Greenway Trail Project, Jackson County, Oregon. In this Opinion, NOAA Fisheries concludes that the proposed action is not likely to jeopardize the continued existence of ESA-listed Southern Oregon/Northern California (SONC) coast coho salmon (*Oncorhynchus kisutch*), or destroy or adversely modify designated critical habitat. As required by section 7 of the ESA, NOAA Fisheries includes reasonable and prudent measures with non-discretionary terms and conditions that NOAA Fisheries believes are necessary to minimize the impact of incidental take associated with this action.

This document also serves as consultation on essential fish habitat pursuant to section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act and implementing regulations at 50 CFR Part 600.

If you have any questions regarding this consultation, please contact Art Martin of my staff in the Oregon Habitat Branch at 503.231.6848.

Sincerely,

for Michael R Crouse

D. Robert Lohn
Regional Administrator

cc: Molly Cary, ODOT

Diana Hwang, USFWS
Tom Murtagh, ODFW

Endangered Species Act - Section 7 Consultation
Biological Opinion

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Magnuson-Stevens Fishery Conservation and Management Act
Essential Fish Habitat Consultation

Bear Creek Greenway Trail Project,
Jackson County, Oregon

Agency:	Federal Highway Administration
Consultation Conducted By:	National Marine Fisheries Service, Northwest Region
Date Issued:	March 17, 2003
Issued by:	for Michael R Crouse _____ D. Robert Lohn Regional Administrator
Refer to:	**2002/01503**

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1. INTRODUCTION

1.1 Background

On December 31, 2002, the National Marine Fisheries Service (NOAA Fisheries) received a request from the Federal Highway Administration (FHWA) for Endangered Species Act (ESA) section 7 formal consultation for the Bear Creek Greenway Trail Project, Jackson County, Oregon. The Oregon Department of Transportation (ODOT) is the designated non-federal representative of the FHWA. Jackson County is the applicant, and OBEC Consulting Engineers, Inc., is the prime consultant for Jackson County and is responsible for the project design and construction management.

The FHWA has determined that Southern Oregon/Northern California (SONC) coho salmon (*Oncorhynchus kisutch*) may occur within the project area. The SONC coho salmon were listed as threatened under the ESA on May 6, 1997 (62 FR 24588), critical habitat was designated on May 5, 1999 (64 FR 24049), and interim protective regulations were issued under section 4(d) of the ESA on July 18, 1997 (62 FR 38479). The FHWA, using methods described in *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996), determined that the proposed action is likely to adversely affect SONC coho salmon.

This biological opinion (Opinion) is based on the information presented in the biological assessment (BA) and developed through correspondence to obtain additional information and clarity. The objective of this Opinion is to determine whether the action to construct a trail segment along Bear Creek is likely to jeopardize the continued existence of the SONC coho salmon. This consultation is undertaken under section 7(a)(2) of the ESA, and its implementing regulations, 50 CFR Part 402.

1.2 Proposed Action

The proposed action includes the construction of: (1) A 4.4 kilometer (km) segment of the Bear Creek Greenway Trail; (2) a 90 meter (m) combination vehicle/pedestrian/bike bridge over Bear Creek; (3) a 20 m pedestrian/bike bridge over Coleman Creek; (4) nine barbs and a rehabilitated, replanted bank line along an existing segment of hilfiker wall on Bear Creek; and (5) a compensatory mitigation wetland.

The project BA includes a set of conservation measures or best management practices (BMPs) designed to minimize adverse effects to SONC coho salmon and their habitat. These BMPs are described on pages 30-38 of the BA. Specific BMPs for in-water work, trail construction, bank work, revegetation, bridge construction, clearing and grubbing, erosion control, hazardous materials, and site-specific conservation measures are included. NOAA Fisheries regards these BMPs as integral components of the project and considers them to be part of the proposed action.

Direct effects to listed species may occur at the project sites and may extend upstream or downstream based on: (1) The potential for impairing fish passage; (2) change to stream hydraulics; (3) sediment and pollutant discharge; (4) risk of chemical contamination of the aquatic environment; (5) stormwater effects; and (6) the extent of riparian habitat modifications. Indirect effects to listed species may occur throughout the watershed where the actions described in this Opinion lead to additional activities or affect ecological functions contributing to stream degradation. As such, the action area for the proposed activities includes the immediate watershed where the proposed action will occur, and those areas upstream and downstream that may reasonably be affected, temporarily or in the long term. For the purposes of this Opinion, the action area is defined as the channel and adjacent riparian area 500 feet upstream from the project sites on Bear and Coleman Creeks, and downstream one mile below the project site. Coleman Creek is a tributary of Bear Creek. Bear Creek is a tributary to the Rogue River. Other areas of the Bear Creek watershed will not be directly affected.

All in-water work activities will occur during the Oregon Department of Fish and Wildlife's (ODFW) preferred in-water work timing guideline[1] of June 15 through September 15. Any extensions or alterations to the standard in-water work timing will require the written concurrence from NOAA Fisheries.

1.2.1 Bear Creek Greenway Trail

The proposed action will include the construction of a 4.4 km long segment of the Bear Creek Greenway Trail along Bear Creek. The entire Bear Creek Greenway Trail, when complete, will extend 29.8 km from the City of Central Point to the City of Ashland, Oregon. The proposed design includes a 3 m wide paved surface with a 0.6 m wide graveled shoulder on either side of the paved surface. Construction will require approximately 12,615 cubic m (m^3) of fill, and will result in approximately 13,200 square m (m^2) of new impervious surface. New culverts, bioswales, concrete curbs, hand rails, retaining walls, and concrete barriers may be constructed at various locations along the new trail segment as necessary.

1.2.2 Bear Creek Bridge

The proposed action will include the construction of a new 90 m-long, three-span vehicle/pedestrian/bike bridge over Bear Creek. The new Bear Creek bridge will be located across from the future Medford Sports Complex. The bridge design consists of three 12 m-wide cast-in-place decks supported by precast, bulb tee bridge girders. The bridge girders will rest on two concrete drilled shaft foundation abutments and two concrete drilled shaft foundation piers. The bridge piers will be located within the ordinary high water mark (OHWM) of Bear Creek and the bridge abutments will be located outside of the OHWM of Bear Creek. The new Bear Creek bridge will result in 1,080 m^2 of new impervious surface. Stormwater runoff from the

[1] Oregon Department of Fish and Wildlife, *Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources*, 12 pp (June 2000)(identifying work periods with the least impact on fish)(http://www.dfw.state.or.us/ODFWhtml/InfoCntrHbt/0600_inwtrguide.pdf).

bridge deck will be routed through bioswales prior to discharge in the Bear Creek riparian corridor.

Construction of the new Bear Creek bridge will require the construction of a temporary work bridge. The temporary wok bridge will be constructed utilizing one of three construction options detailed below.

Option #1
The contractor may choose to build a temporary work bridge that spans the entire boundary of the OHWM. This would be a pile-supported structure approximately 70 m-long. Temporary piles may be driven in the active flowing stream; this would occur during the preferred in-water work period, as detailed in section 1.2 of this Opinion, and silt curtains would be used to limit turbidity increases. This bridge would stay in place until the following in-water work period. This option would require a total of 229 m^3 of fill for the approaches, none of which is below the OHWM.

Option #2
The contractor may choose to build a shorter temporary work bridge that spans the ordinary low flow channel. This option would require access ramps at either end to be constructed of fill material. The temporary bridge and fill would be installed during the preferred in-water work period. However, the fill ramps would need to be removed before the end of the in-water work period in order to minimize the possibility of fill washing downstream under ordinary high water flows. This option would require a total of 382 m^3 of fill; 229 m^3 would be below the OHWM.

Option #3
The contractor may choose to build a shorter temporary work bridge that spans the ordinary low flow channel; the ramps at each end of the bridge would be constructed of riprap up to the OHWM elevation. This would minimize the risk of the temporary fill being washed downstream during ordinary high water flows. Crushed rock could be placed on top of the riprap for a driving surface as long as it is placed above the OHWM. This option would be allowed to stay in place until the following in-water work period. This option would require a total of 382 m^3 of fill,
229 m^3 would be below the OHWM.

Regardless of the temporary work bridge option selected, any bridge materials or approach ramp fill below the OHWM will be removed during the preferred in-water work period upon completion of the new Bear Creek bridge. Construction of the new Bear Creek bridge will result in the removal of up to eleven existing riparian trees. Whenever possible during the entire project, all removed trees will have their root wads left intact for stability, and the upper one-third of the tree will be placed in the creek. Where this is not possible, the tree will be allowed to remain in the riparian area.

1.2.3 Coleman Creek Bridge

The proposed action will include the construction of a new 20 m long, single span pedestrian/bike bridge over Coleman Creek. The new Coleman Creek bridge will be located approximately 35 m upstream of its confluence with Bear Creek. The bridge design consists of a 3.7 m-wide precast deck supported with pile driven bridge abutments outside of the OHWM of Coleman Creek. Stormwater runoff from the pedestrian bridge will be collected with concrete drainage curbs and directed through the existing riparian vegetation prior to its discharge into Coleman Creek. The entire new Coleman Creek bridge will be constructed from above the OHWM of Coleman Creek, and will not need a temporary work bridge.

1.2.4 Bear Creek Barbs and Bank Rehabilitation

The proposed action will include the construction of nine in-stream barbs, removal of approximately 60 m of armored bankline, and placement of scour protection along Bear Creek, adjacent to an existing hilfiker retaining wall as detailed below.

Bear Creek Barbs

Nine in-stream barbs will be installed upstream of and along the existing retaining wall. Native streambed materials will be excavated below the OHWM of Bear Creek and stockpiled on site. Metric class 350 riprap will then be placed as per FHWA guidelines to create barbs at an upstream angle to the bankline. The native streambed materials will then be used to cover the riprap barbs. The objective of the barbs is to protect the stream bank by moving the thalweg of Bear Creek away from the retaining wall to allow for the deposition and revegetation of a natural bankline along the retaining wall. Approximately 183 m^3 of streambed materials will be used to cover the barbs. Depositional areas between barbs will be replanted with native plantings.

Rehabilitation of the Bear Creek Bankline

Concurrent with the placement of the in-stream barbs, approximately 60 m of existing armored bankline upstream of the retaining wall will be rehabilitated. The existing riprap armoring will be removed and the bankline will be recontoured to a 2:1 slope. The rehabilitated bankline will be covered in erosion control matting and replanted with native vegetation to enhance long-term bank stability and function.

Scour Protection Placement

Concurrent with in-stream barb placement and bankline rehabilitation, scour protection placement will occur just downstream of the retaining wall on Bear Creek. Metric class 350 riprap will be used to armor the Bear Creek bankline below the OHWM. Approximately 287 m^3 of riprap will be placed below the OHWM of Bear Creek to construct both the barbs and the scour protection.

Other activities at this location will include work area isolation, fish removal and salvage, and placement of boulders along the retaining wall to promote the formation of riffle and pool habitat.

1.2.5 Compensatory Wetland Mitigation

The proposed action will include the construction of a compensatory mitigation wetland adjacent to Bear Creek, upstream of the existing hilfiker retaining wall area. The wetland design includes grading of the site to intercept persistent shallow groundwater as well as planting native wetland vegetation. Native trees will be planted to compliment the existing Bear Creek riparian community. No specific surface water connection to Bear Creek will be constructed.

1.2.6 Stormwater

The soils along the Bear Creek riparian corridor are classified as Camas/Newburg/Evans complex. Due to the sandy and gravely nature of the soils, they are considered to be very permeable, with potential infiltration rates of 2.6 to 15.2 centimeters (cm) per hour. The general design of the trail surface slopes to drain stormwater runoff away from Bear Creek towards riparian areas where stormwater will be biofiltered or infiltrate prior to reaching Bear Creek.

Bioswales designed according to the ODOT hydraulics manual will be used to treat stormwater runoff from the new Bear Creek bridge, and will be sized to treat runoff from up to the 1/3 of the two-year, 24-hour storm event, otherwise known as the water quality storm event.

2. ENDANGERED SPECIES ACT

2.1 Biological Opinion

2.1.1 Biological Information and Critical Habitat

Within the Bear Creek watershed, NOAA Fisheries listed the SONC coho salmon as threatened under the ESA on May 6, 1997 (62 FR 24588), critical habitat was designated on May 5,1999 (64 FR 24049), and interim protective regulations were issued under section 4(d) of the ESA on July 18, 1997 (62 FR 38479). Critical habitat includes all streams accessible to listed coho salmon between Cape Blanco, Oregon, and Punta Gorda, California. The designation includes all waterways, substrates, and adjacent riparian zones below longstanding, naturally-impassable barriers. The adjacent riparian zone is defined based on key riparian functions. These functions are shade, sediment, nutrient/chemical regulation, streambank stability, and input of large woody debris/organic matter.

Coho salmon are known to spawn and rear in the Bear Creek watershed. Adult coho salmon enter Bear Creek in early November and spawn through January, with all spawning activity occurring upstream from the project site. Coho salmon are distributed throughout most of the mainstem of Bear Creek, past the city of Ashland and in some larger tributaries. Juvenile coho salmon may occur in the project area during the early part of the in-water work period, the end of the spring out-migration period.

2.1.2 Evaluating Proposed Actions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NOAA Fisheries must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the definition of the biological requirements and current status of the listed species, and evaluation of the relevance of the environmental baseline to the species' current status.

Subsequently, NOAA Fisheries evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NOAA Fisheries must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NOAA Fisheries finds that the action is likely to jeopardize the listed species, NOAA Fisheries must identify reasonable and prudent alternatives for the action.

Furthermore, NOAA Fisheries evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. NOAA Fisheries must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. NOAA Fisheries identifies those effects of the action that impair the function of any essential element of critical habitat. NOAA Fisheries then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NOAA Fisheries concludes that the action will destroy or adversely modify critical habitat, it must identify any reasonable and prudent alternatives available.

For the proposed action, NOAA Fisheries' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NOAA Fisheries' critical habitat analysis considers the extent to which the proposed action impairs the function of essential biological elements necessary for juvenile and adult migration, and juvenile rearing of SONC coho salmon.

2.1.2.1 Biological Requirements

The first step in the methods NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed coho salmon is to define the species' biological requirements that are most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list SONC coho salmon for ESA protection and also considers new available data that is relevant to the determination.

The relevant biological requirements are those necessary for SONC coho salmon to survive and recover to naturally-reproducing population levels, at which time protection under the ESA

would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful migration and juvenile rearing in the action area. The current status of the SONC coho salmon, based upon their risk of extinction, has not significantly improved since the species was listed. The Bear Creek watershed serves as freshwater riverine spawning habitat and year-round juvenile rearing habitat. Lack of complex cover, deep pools, and undercut banks combined with high summer water temperatures may limit successful juvenile salmonid rearing in the action area.

2.1.2.2 Environmental Baseline

The current range-wide status of the identified ESU may be found in Nickelson *et al.* (1992) and Weitkamp *et al.* (1995). The identified action will occur within the range of SONC coho salmon. The action area is the area that is directly and indirectly affected by the action. The direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect effects may occur throughout the watershed where actions described in this Opinion lead to additional activities or affect ecological functions contributing to stream degradation. For the purposes of this Opinion, the action area is the channel and adjacent riparian area 500 feet upstream from the project site and downstream one mile below the project site. Temporary indirect impacts (disruption of primary productivity and food resources) and potential direct affects (sediment, pollutant discharge and hydraulics) to Bear Creek will be caused by the in-water work and general riparian and bank disturbance within the project area.

The dominant land use in the Bear Creek watershed is private agriculture and urban development. Bear Creek is water-deficient, primarily due to the seasonal pattern of rainfall and the demand for water for urban and irrigation use. There are six reservoirs in use in the Bear Creek basin. Further, scattered temporary push-up dams are constructed during the irrigation season. Various water quality monitoring within Bear Creek by Oregon's Department of Environmental Quality shows degraded water quality regarding temperatures, biological oxygen demand, dissolved oxygen, ammonia, sediment and pH levels.

Based on the best available information regarding the current status of SONC coho salmon range-wide, the population status, trends, genetics, and the poor environmental baseline conditions within the action area, NOAA Fisheries concludes that the biological requirements of SONC coho salmon are not currently being met. Degraded habitat, resulting from agricultural practices, forestry practices, road building, and residential construction, indicate many aquatic habitat indicators are not properly functioning within Bear Creek. Actions that do not maintain or restore properly functioning aquatic habitat conditions would be likely to jeopardize the continued existence of SONC coho salmon.

2.1.3 Analysis of Effects

2.1.3.1 Effects of Proposed Actions

Impacts to waterways from installation of hardened embankments are: (1) Simplification of stream channels; (2) alteration of hydraulic processes; and (3) prevention of natural channel adjustments (Spence *et al*. 1996). Moreover, embankment hardening may shift the erosion point either upstream or downstream of the project site and contribute to stream velocity acceleration. As amplified erosive forces attack different locations and landowners respond with more bank hardening, the river eventually attains a continuous fixed alignment lacking habitat complexity (USACE 1977).

Fish habitats are enhanced by the diversity of habitats at the land-water interface and adjacent bank (USACE 1977). Streamside vegetation provides shade that reduces water temperature. Overhanging branches provide cover from predators. Insects and other invertebrates that fall from overhanging branches may be preyed upon by fish, or provide food sources for other prey organisms. Immersed vegetation, logs, and root wads provide points of attachment for aquatic prey organisms, shelter from swift currents during high flow events, retain bed load materials, enhance channel complexity, and reduce flow velocity.

The most desirable method of bank protection is revegetation. However, revegetation alone can seldom stabilize banks steeper than 3:1 (horizontal:vertical) or areas of high velocity (USACE 1977). Although they are biologically less desirable, fixed structures provide the most reliable means of bank stability. The use of structural measures should be a last resort as it constrains natural processes. Combining structural measures such as sloped riprap, vegetation, and large woody material (LWM) is preferable to a structural solution without vegetation (USACE 1977).

<u>Sedimentation</u>
Potential impacts to listed salmonids from the proposed action include both direct and indirect effects. Potential direct effects include mortality from exposure to suspended sediments (turbidity) and contaminants resulting from ground disturbance and general construction activities. Potential indirect effects include behavioral changes resulting from elevated turbidity level (Sigler *et al.* 1984, Berg and Northcote 1985, Whitman *et al.* 1982, Gregory 1988), during riverbank habitat alterations.

Suspended sediment and turbidity influences on fish reported in the literature range from beneficial to detrimental. Elevated total suspended solids (TSS) conditions have been reported to enhance cover conditions, reduce piscivorous fish/bird predation rates, and improve survival. Elevated TSS conditions have also been reported to cause physiological stress, reduce growth, and adversely affect survival. Of key importance in considering the detrimental effects of TSS on fish is the frequency and the duration of the exposure, not just the TSS concentration.

Behavioral avoidance of turbid waters may be one of the most important effects of suspended

sediments (DeVore *et al.* 1980, Birtwell *et al.* 1984, Scannell 1988). Salmonids have been observed to move laterally and downstream to avoid turbid plumes (McLeay *et al.* 1984, 1987, Sigler *et al.* 1984, Lloyd 1987, Scannell 1988, Servizi and Martens 1991). Juvenile salmonids tend to avoid streams that are chronically turbid, such as glacial streams or those disturbed by human activities, unless the fish need to traverse these streams along migration routes (Lloyd *et al.* 1987). In addition, a potentially positive reported effect is providing refuge and cover from predation (Gregory and Levings 1998).

Fish that remain in turbid, or elevated TSS, waters experience a reduction in predation from piscivorous fish and birds (Gregory and Levings 1998). In systems with intense predation pressure, this provides a beneficial trade off (*e.g.*, enhanced survival) to the cost of potential physical effects (*e.g.*, reduced growth). Turbidity levels of about 23 Nephalometric Turbidity Units (NTU) have been found to minimize bird and fish predation risks (Gregory 1993). Exposure duration is a critical determinant of the occurrence and importance of physical or behavioral effects (Newcombe and MacDonald 1991). Salmonids have evolved in systems that periodically experience short-term pulses (days to weeks) of high suspended sediment loads, often associated with flood events, and are adapted to such high pulse exposures. Adult and larger juvenile salmonids may be little affected by the high concentrations of suspended sediments that occur during storm and snowmelt runoff episodes (Bjornn and Reiser 1991). However, research shows that chronic exposure can cause physiological stress responses that can increase maintenance energy and reduce feeding and growth (Redding *et al.* 1987, Lloyd 1987, Servizi and Martens 1991).

Turbidity, at moderate levels, has the potential to adversely affect primary and secondary productivity, and at high levels, has the potential to injure and kill adult and juvenile fish, and may also interfere with feeding (Spence *et al.* 1996). Newly emerged salmonid fry may be vulnerable to even moderate amounts of turbidity (Bjornn and Reiser 1991). Other behavioral effects on fish, such as gill flaring and feeding changes, have been observed in response to pulses of suspended sediment (Berg and Northcote 1985). Fine, redeposited sediments also have the potential to adversely affect primary and secondary productivity (Spence *et al.* 1996), and to reduce incubation success (Bell 1991) and cover for juvenile salmonids (Bjornn and Reiser 1991). Because the potential for turbidity should be localized and brief, the probability of direct mortality is negligible.

Chemical Contamination

As with all construction activities, accidental release of fuel, oil, and other contaminants may occur. Operation of back-hoes, excavators, and other equipment requires the use of fuel, lubricants, etc., which, if spilled into the channel of a water body or into the adjacent riparian zone, can injure or kill aquatic organisms. Petroleum-based contaminants (such as fuel, oil, and some hydraulic fluids) contain poly-cyclic aromatic hydrocarbons (PAHs), which can be acutely toxic to salmonids at high levels of exposure and can also cause chronic lethal and acute and chronic sublethal effects to aquatic organisms (Neff 1985). Similarly, exposure to herbicides can have lethal and sublethal effects on salmonids, aquatic invertebrates, aquatic vegetation, and target and non-target riparian vegetation (Spence *et al.* 1996). Exposure to water contaminated

with runoff contacting green concrete and the associated changes in water chemistry also can have lethal and sublethal effects on salmonids, aquatic invertebrates, aquatic vegetation, and target and non-target riparian vegetation.

Construction-related effects necessary to complete the proposed action will be minimized by completing the in-water work during low flow periods.

Stream Hydraulics

The placement of drilled shaft bridge piers, in-stream barbs and riprap placement below the OHWM of Bear Creek would typically result in simplification of habitat and increased stream velocities under and along the structure and hard points. However, because the existing hilfiker retaining wall has already degraded stream hydraulics and is devoid of functional riparian vegetation; is already completely simplified in terms of salmonid habitat; and the new bridge piers, barbs, and scour protection fill will represent no net decrease in the floodway cross section and may increase habitat complexity and bankline function, no long-term adverse affect is likely to occur to stream hydraulics as a result of the proposed action.

Riparian Vegetation

The removal of some, mostly non-native invasive species of riparian vegetation, such as Himalayan blackberries and some native riparian vegetation, will result in the short-term potential for exposed soils and increased sediment transport to Bear Creek. However, during construction, extensive erosion control measures and the proposed riparian plantings and wetland mitigation plantings will result in long-term beneficial effects to the Bear Creek riparian corridor. Riparian plantings will provide erosion control, bank stabilization, shading, allochthonous inputs, and increase the potential for insect production.

Work Area Isolation and Fish Removal

Work at the new Bear Creek bridge and the existing hilfiker retaining wall will require work area isolation from the flowing water of Bear Creek and fish rescue and salvage activities. Any listed fish removed from the isolated work area will experience high stress with the possibility of up to a 5% direct or delayed mortality rate depending on rescue method, should adequate water quality persist during construction and listed salmonids be present. Appropriate NOAA Fisheries approved fish handling methods will minimize adverse effects to any fish removed during the project.

Water Quality Stormwater Effects

The potential exists for an increase in polluted runoff into Bear Creek within the project area from the proposed 13,200 m^2 of new impervious surface (Booth and Jackson 1997). However, the proposed routing of stormwater runoff treatment through engineered bioswales and existing highly permeable, vegetated riparian buffers will more than offset any potential increase in adverse effects to water quality as a result of the proposed action.

Hydrologic Stormwater Effects

The potential exists for reduced evapotransporation and infiltration opportunities resulting in an increase in the magnitude and duration of peak discharge and decreased summer base flow from the proposed 13,200 m^2 of new impervious surface (Booth and Jackson 1997). The proposed riparian plantings, increased length of drainage patterns, and potential flood storage of the compensatory mitigation wetland, will help to attenuate peak flows through filtration, infiltration, and evapotransporation of stormwater runoff from new and existing impervious surfaces. The proposed stormwater runoff treatment measures, coupled with the avoidance and minimization of potential stormwater effects along Bear Creek will more than offset any potential adverse effects to Bear Creeks annual hydrograph from the proposed action.

2.1.3.2 Effects on Critical Habitat

NOAA Fisheries designates critical habitat based on physical and biological features that are essential to the listed species. Essential features for designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. Effects on critical habitat from the proposed action are included in the effects description above in section 2.1.3.1 of this Opinion.

2.1.3.3 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation". The action area has been defined as the streambed and streambank of Bear and Coleman Creeks, extending upstream to the project disturbance limits, and downstream one mile below the project disturbance limits. Many actions occur within the action area of the Bear Creek watershed.

Non-federal activities within the action area are expected to increase with a projected 34% increase in human population over the next 25 years in Oregon (Oregon Department of Administrative Services 1999). Thus, NOAA Fisheries assumes that future private and state actions will continue within the action area, but at increasingly higher levels as population density increases. NOAA Fisheries assumes that future FHWA transportation projects in the Bear Creek watershed will be reviewed through separate section 7 consultation processes and therefore are not considered cumulative effects.

2.1.4 Conclusion

NOAA Fisheries has determined that, when the effects of the FHWA's proposed action (Bear Creek Greenway Trail Project) are added to the environmental baseline and cumulative effects occurring in the action area, they are not likely to jeopardize the continued existence of SONC coho salmon, or cause adverse modification or destruction of designated critical habitat. These conclusions were based on the following considerations: (1) All in-water work and other construction activities within the OHWM of Bear Creek will take place according to ODFW guidelines for timing of in-water work or during approved exceptions, to protect fish and wildlife

resources; (2) to the greatest extent possible, all sediment laden water and water contaminated by contact with green concrete or other construction related contaminants will be contained and treated prior to contact with the flowing waters of Bear Creek; (3) any riparian trees removed as a result of the proposed action will be retained within the riparian area, and where feasible, the rootwads will remain attached and the trees will be place partially into the channel of Bear Creek; (4) work area isolation, where necessary, including use of NOAA Fisheries' guidelines for proper fish handling (NMFS 2000) and other conservation measures will be in place to avoid or minimize adverse affects to water quality; (5) riparian vegetation cleared for access and construction and scour protection measures will be more than offset by the native riparian plantings; and (6) bridge piers, in-stream barbs, and scour protection measures will not result in long-term adverse effects to Bear Creek hydraulics. Therefore, the proposed action is not expected to prevent or delay the achievement of properly functioning habitat conditions in the action area.

2.1.5 Reinitiation of Consultation

As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and if: (1) The amount or extent of incidental take is exceeded, (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this Opinion, (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this Opinion, or (4) a new species is listed or critical habitat is designated that may be affected by the action. In instances where the amount or extent of authorized incidental take is exceeded, any operations causing such take must cease pending reinitiation of consultation.

2.2 Incidental Take Statement

Section 9 and rules promulgated under section 4(d) of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. "Harass" is defined as actions that create the likelihood of injuring listed species to by annoying it to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. "Incidental take" is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of listed species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets

forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.2.1 Amount or Extent of the Take

NOAA Fisheries anticipates that the actions covered by this Opinion are reasonably certain to result in incidental take of SONC coho salmon because of potential adverse effects from increased sediment levels, chemical contamination, in-stream riprap placement and the potential for direct incidental take during in-water work. Handling of juvenile coho salmon during the work isolation process may result in incidental take of individuals if adequate water quality allows juvenile salmonids to be present during the construction period. NOAA Fisheries anticipates non-lethal incidental take of up to 50 individuals, of which, lethal take of 3 juvenile coho salmon could occur as a result of the fish rescue, salvage and relocation activities covered by this Opinion. The potential adverse effects of the other project components on population levels are largely unquantifiable and NOAA Fisheries does not expect them to be measurable in the long term. The extent of authorized take is limited to SONC coho salmon in Bear or Coleman Creeks and is limited to that caused by the proposed action within the action area.

2.2.2 Reasonable and Prudent Measures

The measures described below are non-discretionary. They must be implemented so that they become binding conditions in order for the exemption in section 7(a)(2) to apply. The FHWA has the continuing duty to regulate the activities covered in this incidental take statement. If the FHWA fails to require the contractor to adhere to the terms and conditions of the incidental take statement through enforceable terms added to the document authorizing this action, or fails to retain the oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(a)(2) may lapse.

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of the above species. The FHWA shall:

1. Minimize the likelihood of incidental take from bridge work or streambank alteration actions by directing the contractor to use an approach that maximizes ecological functions and the best available bioengineering technology.

2. Minimize the likelihood of incidental take from trail construction, bridge construction, streambank alteration, temporary access roads, use of heavy equipment, earthwork, site restoration, or that may otherwise involve in-water work or affect fish passage by directing the contractor to avoid or minimize disturbance to riparian and aquatic systems.

3. Minimize the likelihood of incidental take from in-water work activities by ensuring that the in-water work activities (bridge construction or streambank alteration) are isolated from flowing water as necessary.

4. Complete a comprehensive monitoring and reporting program to ensure implementation of these conservation measures are effective in minimizing the likelihood of take from permitted activities.

2.2.3 Terms and Conditions

To be exempt from the prohibitions of section 9 of the ESA, FHWA must comply with the following terms and conditions, which implement the reasonable and prudent measures described above for each category of activity.

1. To implement reasonable and prudent measure #1 (bridge work or streambank alteration actions), the FHWA shall ensure that:
   a. The use of rock and riprap is avoided or minimized.
      i. Rock will be individually placed in a way that produces an irregularly contoured face to provide velocity disruption.
      ii. No end-dumping will be allowed.
   b. Any instream large wood or riparian vegetation that is moved or altered during construction will stay on-site or be replaced with a functional equivalent.
   c. Where feasible, the bankline will be revegetated using natural vegetation.

2. To implement reasonable and prudent measure #2 (trail construction, bridge construction, streambank alteration, temporary access roads, use of heavy equipment, earthwork, site restoration, or that may otherwise involve in-water work or affect fish passage), the FHWA shall ensure that:
   a. Project design. Alteration or disturbance of the stream banks and existing riparian vegetation will be minimized.
   b. In-water work. All work within the active channel will be completed within the in-water work period of June 15 - September 15 for the site as recommended by ODFW[2]. NOAA Fisheries must concur in writing with in-water work period extensions.
   c. Pollution and erosion control plan. A pollution and erosion control plan (PECP) will be developed for the project to prevent point-source pollution related to construction operations. The PECP will contain the pertinent elements listed below and meet requirements of all applicable laws and regulations.
      i. Measures will be taken to prevent erosion and sedimentation associated with access roads, construction sites, equipment and material storage sites, fueling operations and staging areas.
      ii. A description of the hazardous products or materials that will be used, including inventory, storage, handling, and monitoring.

[2] Oregon Department of Fish and Wildlife, *Guidelines for Timing of In-Water Work to Protect Fish and Wildlife Resources*, 12 pp (June 2000)(identifying work periods with the least impact on fish)(http://www.dfw.state.or.us/ODFWhtml/InfoCntrHbt/0600_inwtrguide.pdf).

iii. A spill containment and control plan with notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures that will be available on site, proposed methods for disposal of spilled materials, and employee training for spill containment.

iv. Measures will be taken to prevent construction debris from falling into any aquatic habitat. Any material that falls into a stream during construction operations will be removed in a manner that has a minimum impact on the streambed and water quality.

d. Pre-construction activities. Prior to significant alteration of the action area, the following actions will be accomplished:

i. Boundaries of the clearing limits associated with site access and construction are flagged to prevent ground disturbance of critical riparian vegetation, wetlands and other sensitive sites beyond the flagged boundary.

ii. A supply of erosion control materials (*e.g.*, silt fence and straw bales) is on hand to respond to sediment emergencies. Sterile straw or hay bales will be used when available to prevent introduction of weeds.

iii. All temporary erosion controls (*e.g.*, straw bales, silt fences) are in-place and appropriately installed downslope of project activities within the riparian area. Effective erosion control measures will be in-place at all times during the contract, and will remain and be maintained until such time that permanent erosion control measures are effective.

e. Earthwork. Earthwork, including drilling, blasting, excavation, dredging, filling and compacting, is completed in the following manner:

i. Boulders, rock, woody materials and other natural construction materials used for the project must be obtained from outside of the riparian area or as otherwise approved by NOAA Fisheries.

ii. Material removed during excavation will only be placed in locations where it cannot enter streams or other water bodies.

iii. All exposed or disturbed areas will be stabilized to prevent erosion.

(1) Areas of bare soil within 150 feet of waterways, wetlands or other sensitive areas will be stabilized by native seeding,[3] mulching, and placement of erosion control blankets and mats, if applicable, quickly as reasonable after exposure, but within 7 days of exposure.

(2) All other areas will be stabilized as quickly as reasonable, but within 14 days of exposure.

(3) Seeding outside of the growing season will not be considered adequate for permanent stabilization.

[3] By Executive Order 13112 (February 3, 1999), Federal agencies are not authorized to permit, fund or carry out actions that are likely to cause, or promote, the introduction or spread of invasive species. Therefore, only native vegetation that is indigenous to the project vicinity, or the region of the state where the project is located, shall be used.

f. Heavy Equipment. Heavy equipment will be fueled, maintained and stored as follows:
   i. Vehicle staging, maintenance, refueling, and fuel storage areas will be a minimum of 150 feet horizontal distance from any stream.
   ii. All vehicles operated within 150 feet of any stream or water body will be inspected daily for fluid leaks before leaving the vehicle staging area. Any leaks detected will be repaired before the vehicle resumes operation.
   iii. When not in use, vehicles will be stored in the vehicle staging area.

g. Site restoration. Site restoration and cleanup, including protection of bare earth by seeding, planting, mulching and fertilizing, will be done in the following manner:
   i. Disturbed areas will be planted with native vegetation specific to the project vicinity or the region of the state where the project is located, and will comprise a diverse assemblage of woody and herbaceous species.
   ii. No herbicide application will occur as part of this permitted action. Mechanical removal of undesired vegetation and root nodes is permitted.
   iii. No surface application of fertilizer will be used within 50 feet of any stream channel as part of this permitted action.
   iv. Plantings will achieve an 80% survival or 80% cover success after five years.
      (1) If success standard has not been achieved after five years, the applicant will submit an alternative plan to NOAA Fisheries. The alternative plan will address temporal loss of function.
      (2) Plant establishment monitoring will continue and monitoring reports will be submitted to NOAA Fisheries on an annual basis until site restoration success has been achieved.

3. To implement reasonable and prudent measure #3 (in-water work area activities), the FHWA shall ensure that the in-water work activities (bridge construction or streambank alteration) are isolated from flowing water.
   a. If the fish salvaging aspect of this project requires the use of seine equipment to capture fish, it must be accomplished as follows:
      i. Before and intermittently during pumping, attempts will be made to seine and release fish from the work isolation area as is prudent to minimize risk of injury.
      ii. Seining will be conducted by, or under the supervision of a fishery biologist experienced in such efforts. Staff working with the seining operation must have the necessary knowledge, skills, and abilities to ensure the safe handling of all ESA-listed fish.
      iii. ESA-listed fish must be handled with extreme care and kept in water to the maximum extent possible during seining and transfer procedures. The transfer of ESA-listed fish must be conducted using a sanctuary net that holds water during transfer, whenever appropriate, to prevent the added stress of an out-of-water transfer.

iv. Seined fish must be released as near as possible to capture sites.

v. The FHWA shall ensure that the transfer of any ESA-listed fish to third parties other than NOAA Fisheries personnel receives prior approval from NOAA Fisheries.

vi. The FHWA shall ensure that any other Federal, state, and local permits and authorizations necessary for the conduct of the seining activities will be obtained prior to project seining activity.

vii. The FHWA must allow NOAA Fisheries or its designated representative to accompany field personnel during the seining activity, and allow such representative to inspect the seining records and facilities.

viii. A description of any seine and release effort will be included in a post-project report, including the name and address of the supervisory fishery biologist, methods used to isolate the work area and minimize disturbances to ESA-listed species, stream conditions before and following placement and removal of barriers, the means of fish removal, the number of fish removed by species, the condition of all fish released, and any incidence of observed injury or mortality.

b. If the fish salvaging aspect of this project requires the use of electrofishing equipment to capture fish, it must be accomplished as described in the NOAA Fisheries electrofishing guidelines[4].

4. To implement reasonable and prudent measure #4 (monitoring and reporting), the FHWA shall ensure that:

a. Within 120 days of completing the project, the FHWA shall ensure submittal of a monitoring report to NOAA Fisheries describing the FHWA's success meeting their permit conditions. This report will consist of the following information:

i. Project identification.

(1) Project name,

(2) starting and ending dates of work completed for this project,

(3) the FHWA contact person.

ii. Isolation of in-water work area. All projects involving isolation of in-water work areas must include a report of any seine and release or other fish rescue and salvage activity including:

(1) The name and address of the supervisory fish biologist,

(2) methods used to isolate the work area and minimize disturbances to fish species,

(3) stream conditions prior to and following placement and removal of barriers,

(4) the means of fish removal,

(5) the number of fish removed by species,

(6) the location and condition of all fish released, and

[4]NMFS (National Marine Fisheries Service), *Backpack Electrofishing Guidelines* (December 1998) (http://www.nwr.noaa.gov/1salmon/salmesa/pubs/electrog.pdf).

(7) any incidence of observed injury or mortality.

iii. Pollution and erosion control. A summary of all pollution and erosion control inspection reports, including descriptions of any failures experienced with erosion control measures, efforts made to correct them and a description of any accidental spills of hazardous materials.

iv. Site restoration. Documentation of the following conditions:
(1) Finished grade slopes and elevations,
(2) log and rock structure elevations, orientation, and anchoring, if any,
(3) planting composition and density, and
(4) a plan to inspect and, if necessary, replace failed plantings and structures for a period of 5 years, including the compensatory mitigation site.

v. A narrative assessment of the effects of the project and compensatory mitigation on natural stream function.

vi. Photographic documentation of environmental conditions at the project site before, during and after project completion.
(1) Photographs will include general project location views and close-ups showing details of the project area and project, including pre- and post-construction.
(2) Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.
(3) Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, and upstream and downstream of the project.

b. On an annual basis, for 5 years after completing the project, the FHWA shall ensure submittal of a monitoring report to NOAA Fisheries describing the FHWA's success in meeting their fish passage and site restoration goals. This report will consist of the following information:

i. Project identification.
(1) Project name,
(2) starting and ending dates of work completed for this project, and
(3) the FHWA contact person.

ii. Site restoration. Documentation of the following conditions:
(1) Any changes in log and rock structure elevations, orientation, and anchoring.
(2) Any changes in planting composition and density.
(3) A plan to inspect and, if necessary, replace failed plantings and structures, including the compensatory mitigation site.

iii. A narrative assessment of the effects of the project and compensatory mitigation on natural stream function.

iv. Photographic documentation of environmental conditions at the project site after project completion as they relate to fish passage and site restorations goals as described above.

(1) Photographs will include general project location views and close-ups showing details of the project area and habitat features of the channel relocated reaches.

(2) Each photograph will be labeled with the date, time, photo point, project name, the name of the photographer, and a comment describing the photograph's subject.

(3) Relevant habitat conditions include characteristics of channels, streambanks, riparian vegetation, flows, water quality, and other visually discernable environmental conditions at the project area, as they relate fish passage and site restorations goals.

c. Submit monitoring reports to:

NOAA Fisheries
Oregon Habitat Branch, Habitat Conservation Division
Attn: 2002/01503
525 NE Oregon Street, Suite 500
Portland, OR 97232-2778

d. If a dead, injured, or sick endangered or threatened species specimen is located, initial notification must be made to the NOAA Fisheries' Law Enforcement Office, located at Vancouver Field Office, 600 Maritime, Suite 130, Vancouver, WA 98661; phone: 360.418.4246. Care will be taken in handling sick or injured specimens to ensure effective treatment and care or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered and threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

3. MAGNUSON-STEVENS ACT

3.1 Background

The objective of the essential fish habitat (EFH) consultation is to determine whether the proposed action may adversely affect designated EFH for relevant species, and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH resulting from the proposed action.

3.2 Magnuson-Stevens Fishery Conservation and Management Act

The MSA, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NOAA Fisheries on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of essential fish habitat: "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; "substrate" includes sediment, hard bottom, structures underlying the waters, and associated biological communities; "necessary" means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem, and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (50CFR600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH.
- NOAA Fisheries shall provide conservation recommendations for any Federal or state activity that may adversely affect EFH.
- Federal agencies shall within 30 days after receiving conservation recommendations from NOAA Fisheries provide a detailed response in writing to NOAA Fisheries regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NOAA Fisheries, the Federal agency shall explain its reasons for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities, that may have an adverse effect on EFH. Therefore, EFH consultation with NOAA Fisheries is required by Federal agencies undertaking, permitting or funding activity that may adversely affect EFH, regardless of its location.

3.3 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for three species of Pacific salmon: Chinook (*Oncorhynchus tshawytscha*); coho (*O. kisutch*); and Puget Sound pink salmon (*O. gorbuscha*) (PFMC 1999). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to

salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (*i.e.*, natural waterfalls in existence for several hundred years). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the *Pacific Coast Salmon Plan* (PFMC 1999). Assessment of potential adverse effects to these species' EFH from the proposed action is based on this information.

3.4 Proposed Action

The proposed action is detailed above in section 1.2 of this document. For the purposes of this consultation, the action area is defined as the streambed and streambank of Bear and Coleman Creeks, extending upstream to the project disturbance limits, and downstream one mile below the project disturbance limits. This area has been designated as EFH for various life stages of chinook salmon and coho salmon.

3.5 Effects of Proposed Action

As described in detail in section 2.1.3 of this document, the proposed activities may result in short-term adverse effects to water quality (sediment, chemical contamination, temperature). NOAA Fisheries expects short-term adverse effects from increases in turbidity, chemical contamination, and temperature within the action area.

3.6 Conclusion

The proposed action will adversely affect the EFH for chinook salmon and coho salmon.

3.7 EFH Conservation Recommendations

Pursuant to section 305(b)(4)(A) of the Magnuson-Stevens Act, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that would adversely affect EFH. The conservation measures proposed for the project by the FHWA, all of the reasonable and prudent measures and the terms and conditions contained in sections 2.2.2 and 2.2.3 are applicable to salmon EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH recommendations.

3.8 Statutory Response Requirement

Please note that the Magnuson-Stevens Act (section 305(b)) and 50 CFR 600.920(j) requires the Federal agency to provide a written response to NOAA Fisheries after receiving EFH conservation recommendations within 30 days of its receipt of this letter. This response must include a description of measures proposed by the agency to avoid, minimize, mitigate or offset the adverse impacts of the activity on EFH. If the response is inconsistent with a conservation recommendation from NOAA Fisheries, the agency must explain its reasons for not following the recommendation.

3.9 Supplemental Consultation

The FHWA must reinitiate EFH consultation with NOAA Fisheries if either action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920).

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